REMARKS

Present Status of the Application

The Office Action rejected all presently-pending claims 1-16. Specifically, the Office Action rejected claims 1, 2, 7 and 10-12 under 35 U.S.C. 102(e), as being anticipated by DeJager et al. (U.S. Patent No.6,473,424) ("DeJager", hereinafter). The Office Action also rejected claims 5, 6 and 16 under 35 U.S.C. 103(a) as being unpatentable over DeJager. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Discussion of Amendments to the Drawings

FIG.1 and FIG.2 are amended to more clearly show the invention. Regarding the amendment to FIG.1 and FIG.2, the received data frame is transmitted to the Relay Control Circuit 20, which is supported in the disclosure of the specification. For example, the disclosure in the Lines 9-11, Page 9 of the Specification states "the relay control circuit **20** forwards the received data frame to the sending port. If NOT, the received data frame is forwarded directly via its target port." The function of the relay control circuit 20 for forwarding the received data frame is also clearly defined and supported in the claims of the invention. Amendments addressed to FIG.1 and FIG.2 are clearly supported in the disclosures of the invention and no new matter is entered.

Discussion of Office Action Rejections

The Office Action rejected claims 1, 2, 7 and 10-12 under 35 U.S.C. 102(e), as being anticipated by DeJager. Applicants respectfully traverse the rejections for at least the reasons set forth below.

The present invention provides a relay control method and circuit for use in an Ethernet Switch, which allows the ports of the Ethernet Switch to be configured into groups of arbitrary numbers. The relay control method and circuit can overcome drawbacks of the prior art in requiring the number of ports in each group to be a 2's power for a static allocation method. The present invention provides a relay control method and circuit which can be used in a **static bandwidth allocation method**. However, the DeJager reference provides a port aggregation load balancing for a **dynamic bandwidth allocation**, Col.2, ll. 52-56 and Col.4, ll. 34-37 which states "**The load balancing of the present invention is preferably dynamic**, that is, packets from a given stream may be forwarded on different ports **depending upon each port's current utilization**."

Furthermore, the DeJager reference uses "least utilized queue" to dynamically perform port aggregation load balancing, Col.4, ll. 34-37 or ll. 62-65. In the dynamic load balancing system, large number of registers are required for assisting in determining if any packets of a given stream have been encountered in a given time interval, for example, time-mark registers, least utilized queue registers, transmit queue depth registers, as so on. However, the relay control method and circuit of the present invention uses an index address (CRC modulo) and load balancing relationships (which are stored in the port group configuration) to determine the target

port of the received data frame. (Lines 3-6, Page 9 of the Specification). The DeJager reference is different from the present invention.

In considering the reasons set fourth above, independent claim 1 of the invention is allowable for at least the reason that DeJager does not disclose, teach, or suggest the features in claim 1 above. More specifically, DeJager reference at least did not disclose, teach, or suggest "memory unit for storing a routing table", "a storage unit for storing the port group configuration which is adjustable", or "comparison circuit for forwarding the received frame according to the index address and the port group configuration", which are defined in claim 1.

DeJager does not disclose, teach, or suggest the "**memory unit 30**" as defined in claim 1. The memory unit 30 of the present invention is used for storing a predefined port-assignment table (routing table) which is used to determine the target port of each received data frame. However, the asserted "stream state table" of the DeJager reference is different from the "memory unit 30" of claim 1. The "stream state table" (Figure 2 and Col.5, ll. 42-45) is used for storing the hashed and masked port number (or stream identification, stream ID) currently assigned to a stream. The stored contents of the "memory unit 30" are different from these stored in the "stream state table." In addition, as shown in the steps 303 and 304 of Figure 3A of the DeJager reference, the packet's target port group is determined in step 303 and then, in step 304, hashing and masking packet's address is then performed. Therefore, the memory unit 30 of claim 1 is different from the asserted "stream state table" of the DeJager reference.

DeJager does not disclose, teach, or suggest "**a storage unit for storing the port group configuration which is adjustable**" as defined in claim 1. As explained above, in the dynamic

load balancing system of the DeJager, large number of registers are required for assisting in determining if any packets of a given stream have been encountered in a given time interval. These time-mark registers 408 and 410, least utilized queue registers 412, transmit queue depth registers 414 and registers 418 and 420 are not the "a storage unit 203 for storing the user-predefined port group configuration" of claim 1.

DeJager does not disclose, teach, or suggest "comparison circuit for forwarding the received frame according to **the index address** and **the port group configuration**." In the asserted description in Col. 7, ll. 6-43, it is stated that "one register per port group that indicates the queue number that it believes is the least utilized queue (least utilized queue register). In addition, every queue includes a register that indicates the number of entries it contains (transmit queue depth register)", and "Whenever an element is popped from a transmit queue, the process for each port group compares the queue number with the queue numbers in the port group. If there is a match, then the queue is a member of that port group. If the number of entries on this queue is less than the number of entries on the least utilized queue for that port group, then this queue becomes the new "least utilized queue." If the number of entries on this queue is not less than the number of entries on the least utilized queue for that port group, then the process does nothing." The DeJager used a "least utilized queue" to dynamically perform port aggregation load balancing. In a port group, the DeJager dynamically monitors the transmit queue to allocating received data. However, the relay control method and circuit of the present invention uses an index address (CRC modulo) and load balancing relationships (which are stored in the port group configuration) to determine the target port of the received data frame.

For at least the foregoing reasons, Applicant respectfully submits that independent claim 1 is patently defined over the prior art references, and should be allowed. For at least the same reasons, dependent claims 2-6 are also patently defined over the prior art as well.

In considering the reasons set fourth above, independent claim 7 of the invention is allowable for at least the reason that DeJager does not disclose, teach, or suggest the features in claim 7 above. More specifically, DeJager reference at least did not disclose, teach, or suggest "forwarding the frame according to the index address, the routing table, and the port group configuration", or "adjusting the port group configuration if an over-loading is occurred in the port", which are defined in claim 7. For at least the same reasons, dependent claims 8-11 are also patently defined over the prior art as well.

In considering the reasons set fourth above, independent claim 12 of the invention is allowable for at least the reason that DeJager does not disclose, teach, or suggest the features in claim 12 above. More specifically, DeJager reference at least did not disclose, teach, or suggest "a memory unit for storing a routing table", or "forwarding the frame according to the index address, the routing table, and the port group configuration", which are defined in claim 12. For at least the same reasons, dependent claims 13-16 are also patently defined over the prior art as well.

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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1-16 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,
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